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ACTION									
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	3		8		13		18		
	4	DDS	9		14		19		
	5	TSD	10	EXO	15		20		

25X1

[redacted]

1. THE RESULTS OF EXPOSURE AND HAZE STUDIES CONDUCTED AT [redacted] 25X1 WHICH HAVE INCLUDED TARGETS IN S.E.A., CAN BE SUMMARIZED AS FOLLOWS:

A. THE EFFECTS ON THE PHOTOGRAPHIC IMAGE, DUE TO VARYING AMOUNTS OF HAZE, CANNOT BE COMPENSATED FOR BY CHANGING THE CAMERA EXPOSURE.

B. STUDY OF THE LUMINANCE FREQUENCY DISTRIBUTIONS FROM TARGET MICRODENSITOMETER SCANS INDICATES THAT, AS THE HAZE LEVEL INCREASES, THE HIGH APPARENT LUMINANCES DROP, THE LOW APPARENT LUMINANCES INCREASE, BUT THE MEAN VALUE REMAINS ALMOST UNCHANGED. WITH NO PRIOR KNOWLEDGE OF THE TARGET, THIS MEAN LUMINANCE VALUE (AND HENCE THE RESULTING DENSITY VALUE) MAY BE PREDICTED WITH SURPRISING ACCURACY. ANALYSIS OF THREE MISSIONS CONDUCTED OVER S.E.A. (NOT GS), INCLUDING SOME 40 TARGETS, INDICATED THAT 50 PERCENT OF THE TIME THE MEAN COULD BE PREDICTED WITHIN PLUS OR MINUS 1/3 STOPS; 70 PERCENT PLUS OR MINUS 1/2 STOPS; 93 PERCENT WITHIN PLUS OR MINUS 5/6 STOPS. THE 50 PERCENT VALUE AT PLUS OR MINUS 1/3 STOPS IS PARTICULARLY

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25X1 PAGE 2 [redacted] 0460 S E C R E T

SIGNIFICANT, SINCE THIS IS ABOUT THE LIMIT OF ACCURACY FOR PHOTOGRAPHIC PHOTOMETRY IN THE "REAL WORLD".

C. WITH REGARD TO OBLIQUE PHOTOGRAPHY, THE EFFECT OF INCREASING OBLIQUITY OF LOOK ANGLE IS MUCH THE SAME AS INCREASING THE HAZE LEVEL LOOKING VERTICALLY.

D. IN SUMMATION, A SINGLE SOLAR ALTITUDE VERSUS CAMERA EXPOSURE CURVE, FOR A PARTICULAR COMBINATION OF INSTRUMENT, FILTER, FILM AND PROCESS, APPEARS SUFFICIENT (DISALLOWING ADJUSTMENTS IN EXPOSURE NECESSARY TO COMPENSATE FOR SMEAR).

25X1 2. [redacted] HAS AVAILABLE METHODS OF ANALYSIS AND COMPUTER PROGRAMS FOR ANALYSIS AND PREDICTION WHICH WOULD BE BENEFICIAL FOR EXAMINATION OF SPECIAL "PROBLEM" TARGETS, AND SYSTEM ANOMOLIES. WHILE NOT DIFFICULT IN CONCEPT, THE ANALYSIS IS SOMEWHAT INVOLVED IN EXECUTION.

A. WE WILL BE PLEASED TO OFFER INSTRUCTION IN THE PROCEDURES

25X1 AT [redacted] TO APPROPRIATE GS SYSTEMS REPRESENTATIVES.

3. AWARENESS OF A NUMBER OF SYSTEMATIC RELATIONSHIPS SHOULD MAKE ANALYSIS OF NEW DATA MUCH EASIER, AND SHOULD OBVIATE THE NEED FOR CERTAIN STUDIES.

S E C R E T

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